

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appl. No. 09/942,763

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SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

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and a colorant portion consisting essentially of:

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Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.30 to 0.70 percent by weight
FeO	0.08 to 0.16 percent by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM

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wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of 70 percent or greater at a thickness of 4 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

<sup>3</sup>15. (Amended) The composition as in claim <sup>2</sup>14 wherein the Fe<sub>2</sub>O<sub>3</sub> concentration is from 0.45 to 0.65 weight percent, the Co<sub>3</sub>O<sub>4</sub> concentration is from 8 to 20 PPM and the Se concentration is from 1 to 5 PPM.

<sup>5</sup>18. (Amended) The composition as in claim <sup>1</sup>13 further including titanium dioxide present in an amount up to 1.5 wt. % of the glass composition.

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appln. No. 09/942,763

*B5* <sup>6</sup>19. (Amended) The composition as in claim <sup>5</sup>18 wherein said TiO<sub>2</sub> is present in an amount from 0.33 to 1.0 wt. %

<sup>10</sup>23. (Amended) A neutral gray colored glass composition having a base glass portion comprising:

*B6*

SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.30 to 0.70 percent by weight
FeO	0.08 to 0.16 by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM
NiO	up to 50 PPM

wherein the color of the glass is characterized by a dominant wavelength in the range of less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of 70 percent or greater at a thickness of 4 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appln. No. 09/942,763

*12-25* (Amended) The composition as in claim *23*<sup>*10*</sup> wherein the  $\text{Fe}_2\text{O}_3$  concentration is from 0.45 to 0.65 weight percent, the  $\text{Co}_3\text{O}_4$  concentration is from 8 to 20 PPM, and the Se concentration is from 1 to 5 PPM.

*2935* (Amended) A neutral gray colored glass composition having a base glass portion comprising:

*68*

$\text{SiO}_2$	65 to 80 percent by weight
$\text{Na}_2\text{O}$	10 to 20 percent by weight
$\text{CaO}$	5 to 15 percent by weight
$\text{MgO}$	0 to 10 percent by weight
$\text{Al}_2\text{O}_3$	0 to 5 percent by weight
$\text{K}_2\text{O}$	0 to 5 percent by weight

and a colorant portion consisting essentially of:

$\text{Fe}_2\text{O}_3$ (total iron)	0.45 to 0.70 percent by weight
$\text{FeO}$	0.08 to 0.16 percent by weight
$\text{Co}_3\text{O}_4$	3 to 25 PPM
Se	0.5 to 10 PPM

wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than about 8 percent, a visible light transmission of greater than 70 percent, and a direct solar heat transmission at least 12 percentage points below the visible light transmission at a thickness of 4 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appln. No. 09/942,763

<sup>29</sup>  
37. (Amended) A neutral gray colored glass composition having a base glass portion comprising:

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SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

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B9  
and a colorant portion consisting essentially of:

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Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.45 to 0.70 percent by weight
FeO	0.08 to 0.16 percent by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM

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wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of greater than 70 percent at a thickness of 4 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

<sup>26</sup>  
39. (Amended) A neutral gray colored glass composition having a base glass portion comprising:

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appln. No. 09/942,763

SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

b10

Fe <sub>2</sub> O <sub>3</sub> (total iron)	greater than 0.45 up to 0.65 percent by weight
FeO	0.08 to 0.16 percent by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM
NiO	up to 50 PPM

wherein the glass has a visible light transmission luminous transmittance of greater than 70 percent at a thickness of 4.0 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

b11

46. (Amended) The composition as in claim 39 wherein the Fe<sub>2</sub>O<sub>3</sub> concentration is from 0.51 to 0.61 weight percent, the FeO concentration is from 0.08 to 0.14 weight percent, the Co<sub>3</sub>O<sub>4</sub> concentration is from 5 to 24 PPM, the Se concentration is from 1 to 9 PPM and the NiO concentration is 15 to 31 PPM and further wherein said composition has a visible light transmission of 70 percent or greater at a thickness of 4 millimeters.

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appl. No. 09/942,763

47. (Amended) The composition as in claim 33 wherein the  $\text{Fe}_2\text{O}_3$  concentration is from 0.51 to 0.61 weight percent, the  $\text{FeO}$  concentration is from 0.08 to 0.14 weight percent, the  $\text{Co}_3\text{O}_4$  concentration is from 5 to 24 PPM and the  $\text{Se}$  concentration is from 1 to 9 PPM.

**Add new Claims 48-58, as follows:**

35 48. An IR and UV absorbing soda-lime-silica glass of a neutral tint having, in a nominal 4 mm thickness, a visible light transmittance of at least 70%, a direct solar heat transmission at least twelve percentage points below the visible light transmittance, a dominant wavelength not greater than 560 nm and a color purity of no more than 6%, said glass on a weight basis including as essential ingredients a total iron content expressed as  $\text{Fe}_2\text{O}_3$  from about 0.3% to 0.7%, from about 0.5 to 10 ppm  $\text{Se}$ , from about 3 to 25 ppm  $\text{Co}_3\text{O}_4$ , 0 to 50 ppm  $\text{NiO}$  and 0 to 1.5%  $\text{TiO}_2$ , and having a ferrous iron to total iron (as  $\text{Fe}_2\text{O}_3$ ) ratio in the range of 21 to 34.

36 49. An IR and UV absorbing soda-lime-silica glass as claimed in claim 35 48, wherein said direct solar heat transmission is at least fifteen percentage points below the visible light transmittance.

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appln. No. 09/942,763

<sup>37</sup>~~50~~. An IR and UV absorbing soda-lime-silica glass as claimed in claim <sup>35</sup>~~48~~, having an ultraviolet radiation transmission less than 55%.

<sup>38</sup>~~51~~. An IR and UV absorbing soda-lime-silica glass as claimed in claim <sup>37</sup>~~50~~, wherein said ultraviolet radiation transmission is less than 50%.

<sup>612</sup>  
<sup>39</sup>~~52~~. An IR and UV absorbing soda-lime-silica glass of a neutral tint having, in a nominal 4 mm thickness, a visible light transmittance of at least 70%, a direct solar heat transmission at least fifteen percentage points below the visible light transmittance, a dominant 20 wavelength not greater than 560 nm and a color purity of no more than 6%, said glass on a weight basis including as essential ingredients a total iron content expressed as Fe<sub>2</sub>O<sub>3</sub> from about 0.45% to 0.65%, from about 1 to 5 ppm Se, from about 8 to 20 ppm Co<sub>3</sub>O<sub>4</sub>, 0 to 35 ppm NiO and 0 to 1% TiO<sub>2</sub>, and having a ferrous iron to total iron (as Fe<sub>2</sub>O<sub>3</sub>) ratio in the range of 25 to 31.

<sup>40</sup>~~53~~. An IR and UV absorbing soda-lime-silica glass as claimed in claim <sup>39</sup>~~52~~, wherein said direct solar heat transmission is at least 20 percent points below the visible light transmittance.

<sup>41</sup>~~54~~. An IR and UV absorbing soda-lime-silica glass as claimed in claim <sup>39</sup>~~52~~, wherein said color purity is no more than 5%.

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appln. No. 09/942,763

<sup>42</sup>  
55. An IR and UV absorbing soda-lime-silica glass as claimed in claim <sup>39</sup>~~52~~, wherein  
said color purity is no more than 3%.

<sup>43</sup>  
56. An IR and UV absorbing soda-lime-silica glass as claimed in claim <sup>39</sup>~~52~~, having an  
ultraviolet radiation transmission less than 55%.

<sup>44</sup>  
57. An IR and UV absorbing soda-lime-silica glass as claimed in claim <sup>43</sup>~~56~~, wherein  
said ultraviolet radiation transmission is less than 50%.

<sup>45</sup>  
58. An IR and UV absorbing soda-lime-silica glass of a neutral tint having a base  
glass composition comprising in percent by weight:

SiO <sub>2</sub>	65 - 80
Na <sub>2</sub> O	10 - 20
CaO	5 - 15
MgO	0 - 10
Al <sub>2</sub> O <sub>3</sub>	0 - 5
K <sub>2</sub> O	0 - 15
BaO	0 - 5
B <sub>2</sub> O <sub>3</sub>	0 - 5

AMENDMENT UNDER 37 C.F.R. § 1.111,  
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND  
REQUEST FOR DECLARATION OF INTERFERENCE  
UNDER 37 C.F.R. § 1.607  
U.S. Appln. No. 09/942,763

and traces of melting and refining ads, if any, and colorants consisting essentially of:

Fe<sub>2</sub>O<sub>3</sub> (total iron) 0.3 - 0.7 weight percent;  
Se 0.5 - 10 ppm;  
Co<sub>3</sub>O<sub>4</sub> 3 - 25 ppm;  
TiO<sub>2</sub> 0 - 1.5 weight percent;  
NiO 0-50 ppm; and  
FeO content to provide a ratio of ferrous iron to total iron in the range of 21 to 34,

*B12*  
*come* the glass having a visible light transmittance of at least 70%, a direct solar heat transmission at  
least 12 percentage points below the visible light transmittance, a dominant wavelength not  
greater than 560 nm and a color purity of no more than 6% at a nominal glass thickness of 4 mm.

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